

**ATTACHMENT OF A MICROCADDISFLY  
(TRICHOPTERA: HYDROPTILIDAE) PUPA  
TO THE LEG OF A WATER SCORPION,  
*RANATRA BUENOI* (HETEROPTERA: NEPIDAE)<sup>1</sup>**

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**ABSTRACT:** A microcaddisfly pupa (Trichoptera: *Oxyethira*) was found attached to the leg of a predatory water scorpion (Hemiptera: *Ranatra*). Other reported instances of *Oxyethira* pupae attaching to aquatic insects indicate this behavior may be common for this genus. The behavioral mechanisms that permitted the microcaddisfly to attach itself to the water scorpion without being attacked are unknown.

The caddisfly genus *Oxyethira*, (Trichoptera: Hydroptilidae), is distributed worldwide and approximately 40 species are known from North America (Wiggins 1996). Moulton and Stewart (1997) reported 17 species of *Oxyethira* occur in Texas. The water scorpion, *Ranatra buenoi* Hungerford (Heteroptera: Nepidae), is widely distributed in the southeastern U.S., including Texas (Sites and Polhemus 1994). Recently, we collected a *R. buenoi* nymph to which an early pupa of *Oxyethira* was firmly attached on the left metathoracic femur (Fig. 1). Both ends of the former larval case had been attached to the nepid's leg, the ends were sealed, and apolysis of the larval cuticle was evident. However, ecdysis had not yet occurred and the early, pharate pupa could be discerned through the old larval cuticle. The length of the pupa was 2.8 mm (case 3.2mm) and the *R. buenoi* was 16.5 mm in length (head to apex of respiratory siphons). The specimens were hand collected on 14 June 1999 in a stream pool of Dry Creek, Montgomery County, Texas (N 30° 14' 19.8" W 95° 19' 21.6"). In addition, 17 fifth instar *Oxyethira* larvae and two adult *R. buenoi* were collected with a benthic sampling net (600 mm mesh) at the same location and sampling date. Larvae for most species of *Oxyethira* have not been associated with adult stages so we were unable to determine the specific identity of these specimens.

White and Fox (1979) found several pupal cases of *Oxyethira azteca* Mosely that were fastened to a dragonfly nymph, *Macromia georgiana* (Sel.), collected from a South Carolina stream. Our finding of *Oxyethira* pupating on another aquatic insect suggests that such behavior may be fairly common for this genus. *Oxyethira azteca* also commonly occurs throughout most of eastern Texas, and the specimens we collected could represent this species. Whether this instance represents directed phoresy or is a more random action is un-

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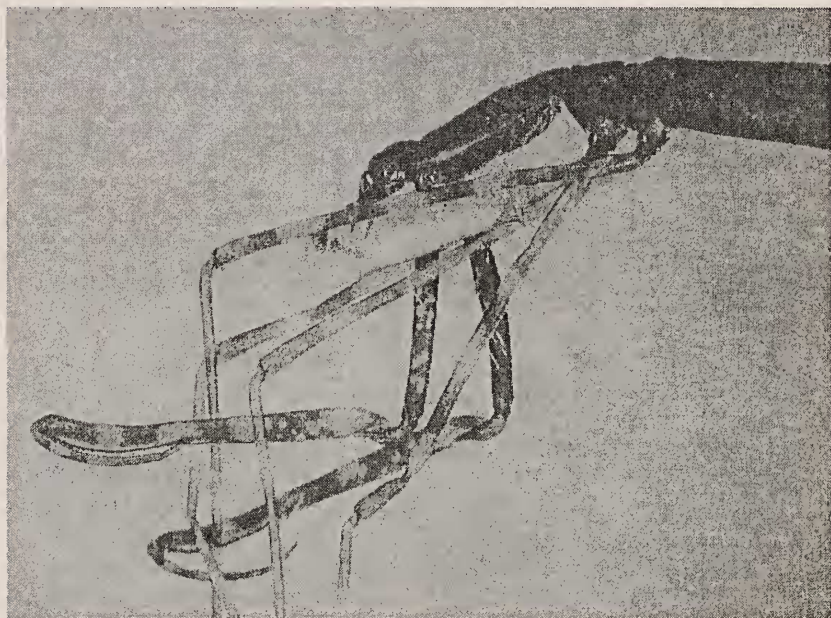


Figure 1. A water scorpion, *Ranatra buenoi* Hungerford, with a microcaddisfly (*Oxyethria* sp.) attached to the metathoracic femur.

known. The possibility exists that the caddisfly may have mistaken the leg of the water scorpion to be a twig or similar inanimate object. White and Fox (1979) suggested that the attachment of *Oxyethira* pupae to the dragonfly nymph they collected was related to the paucity of natural habitat and suitable attachment sites in the channelized stream they studied. This was not the circumstance for the present study location because the flowing stream contained ample woody debris and riparian vegetation.

Although the proboscis of the water scorpion we collected is in close proximity to the microcaddisfly, the body of the latter was fully intact and had not been pierced. The closeness of the nepid's proboscis to a potential food item suggests that microcaddisflies might not play a role in the diet of these predatory insects or that it was unable or unwilling to attack the larva as it attached itself prior to pupation. Also, the nepid simply could have been unaware that the caddisfly was present.

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